

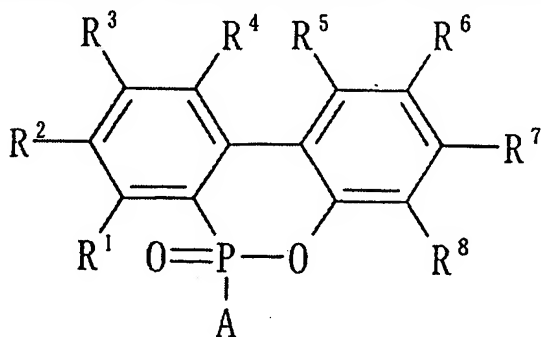
CLAIMS

1. A water-soluble, flame retardant polyester resin prepared by a condensation reaction or a polycondensation reaction of a dicarboxylic-acid component, a glycol component, a water-solubility imparting component and a reactive phosphorus-containing compound such that a ratio of the water-solubility imparting component in a total of the dicarboxylic-acid component and the water-solubility imparting component is in a range of 1 to 60 mol%.

2. The water-soluble, flame retardant polyester resin as set forth in claim 1, wherein amounts of phosphorus atoms derived from the reactive phosphorus-containing compound are in a range of 300 to 100000 ppm.

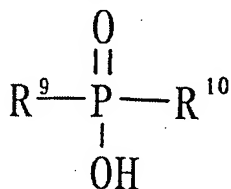
3. The water-soluble, flame retardant polyester resin as set forth in claim 1, wherein the reactive phosphorus-containing compound has at least one ester-forming functional group selected from a carboxyl group and a hydroxyl group.

4. The water-soluble, flame retardant polyester resin as set forth in claim 1, wherein the reactive phosphorus-containing compound is at least one selected from compounds represented by the following general formulas (I), (II) and (III):



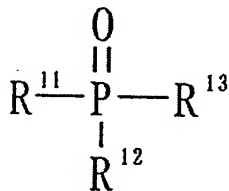
.... (I)

(In the formula, "R¹" to "R⁸" respectively designate hydrogen atom or an organic group, which may be equal to or different from each other, "A" designates hydrogen atom or an organic group, which may be equal to or different from "R¹" to "R⁸", but at least one of "R¹" to "R⁸" and "A" has an ester-forming functional group.)



.... (II)

(In the formula, "R⁹" and "R¹⁰" respectively designate hydrogen atom or an organic group, which may be equal to or different from each other, but at least one of "R⁹" and "R¹⁰" has an ester-forming functional group.)



.... (III)

(In the formula, "R¹¹" to "R¹³" respectively designate hydrogen atom or an organic group, which may be equal to or different from each other, but at least one of "R¹¹" to "R¹³" has an ester-forming functional group.)

5. The water-soluble, flame retardant polyester resin as set forth in claim 1, wherein the water-solubility imparting component comprises a dicarboxylic-acid component with a metal sulfonate group.

6. The water-soluble, flame retardant polyester resin as set forth in claim 1, wherein the water-solubility imparting component comprises at least one of a tribasic acid anhydride and a tetrabasic acid anhydride.

7. The water-soluble, flame retardant polyester resin as set forth in claim 1, wherein the water-solubility imparting component comprises a dicarboxylic-acid component with a metal sulfonate group and at least one of a tribasic acid anhydride and a tetrabasic acid anhydride.

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8. The water-soluble, flame retardant polyester resin as set forth in claim 1, wherein the water-solubility imparting component comprises one of 5-sodium sulfoisophthalic acid and an ester thereof as an dicarboxylic-acid component with a metal sulfonate group.

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9. The water-soluble, flame retardant polyester resin as set forth in claim 1, wherein the water-solubility imparting component comprises at least one of trimellitic anhydride of a tribasic acid anhydride and pyromellitic dianhydride of a tetrabasic acid anhydride.

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10. A resin composition containing the water-soluble, flame retardant polyester resin as set forth in claim 1.

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11. The resin composition as set forth in claim 10 prepared for fiber processing.

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12. The resin composition as set forth in claim 10 prepared for a surface treatment of polyester films.

13. A fiber product treated by use of the resin composition as set forth in claim 10.

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